



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, ILLINOIS 60604

DATE: JUN 06 2018

SUBJECT: CLEAN AIR ACT INSPECTION REPORT
Chesapeake Exploration LLC - Harrison, Columbiana, & Jefferson
Counties, Ohio

FROM: Shilpa Patel, Environmental Engineer
AECAB (MN/OH)

THRU: Brian Dickens, Section Chief
AECAB (MN/OH)

TO: File

BASIC INFORMATION

Facility Name: Chesapeake Exploration LLC

Facility Locations:

Well Pad Name	GPS Latitude	GPS Longitude
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nonresponsive

A large black rectangular redaction box covers the entire table area below the headers, obscuring all data.

Well Pad Name

GPS Latitude

GPS Longitude

nonresponsive

Date of Inspection: September 11-13, 2017

EPA Inspector(s):

1. Shilpa Patel, Environmental Engineer
2. Muhammed Shuaibi, Environmental Engineer

Other Attendees

1. Mike Hostetler, Production Foreman, Chesapeake
2. Mark Deering, Environmental Specialist, Chesapeake
3. Christopher Huey, Production Superintendent, Chesapeake
4. Joe Baker, Operations Manager, Chesapeake
5. Scott Schwab, FLIR Tech, Chesapeake

Purpose of Inspection: Assess vapor capture and control systems' compliance with NSPS Subparts OOOO/OOOOa and permit conditions

Facility Type: Oil and gas production well pad

Regulations Central to Inspection: NSPS Subparts OOOO/OOOOa for storage vessels and vapor capture and control systems.

Inspection Type:

- ☐ Unannounced Inspection
- ☒ Announced Inspection

- ☒ Credentials Presented
- ☒ CBI warning to facility provided

The following information was obtained verbally from Chesapeake personnel unless otherwise noted.

Process Description:

At the well pad, an oil/gas/water emulsion is extracted from the formation through one or multiple wells. The emulsion goes to a separator, from which the gas is sent to the sales line and the liquids are piped to separate 400-barrel, atmospheric pressure, fixed-roof tanks on-site. Depending on the volume of production at the well pad, Chesapeake may utilize a flash gas compressor, which recovers gas from a separation stage before the tank battery; a condensate stabilizer, which heats the liquids to further liberate dissolved gases; or a low-pressure tower, which drops the pressure of the liquids being sent to the tanks to about 2-5 psi, and additional dissolved gas is liberated and sent to the pipeline. The headspaces of the condensate and produced water tanks are piped together and the vapors from the tanks are sent to a combustor for destruction. Each tank has a "thief" hatch on top for gaining access to the liquid when necessary, and sites with condensate storage have an additional hatch on each tank for emergency pressure relief capabilities, referred to as the "emergency PRV" or "emergency hatch." The hatches and one or more pressure relief devices on the vapor piping are set to relieve pressure should the pressure due to flashing, working, or breathing emissions from the liquids contained within the tanks get too high for the vapor collection system to accommodate. More specifically, the hatches and pressure relief devices on the tanks should remain closed unless the pressures exceed the pressure set points. Most tanks are equipped with an automated level gauging probe which penetrates the top of the tank.

We used a FLIR GF320 infrared camera to observe and record organic compound emissions, and a PhoCheck Tiger PID to confirm that emissions observed contain volatile organic emissions (VOCs). When VOC emissions were observed, the locations are noted in the digital image log located in Appendix A.

TOUR INFORMATION

EPA toured the facility: Yes

INSPECTION DATE: SEPTEMBER 11, 2017

Location: Altenhof

Arrival Time: 1:29 pm

Departure Time: 2:08 pm

Data Collected and Observations:

The Altenhof Pad has only one produced water tank and one condensate liquid tank onsite. We did not detect any VOC with the FLIR camera or PID and did not detect any odors.

Photos and/or Videos: were not taken during the inspection.

Field Measurements: were not taken during this inspection.

Location: Jan Paul Farms
Arrival Time: 1:54 pm
Departure Time: 2:08 pm

Data Collected and Observations:

The Jan Paul Farms Pad had three condensate tanks and three produced water tanks on site and in use. A low pressure tower was also in use. We did not detect any VOC with the FLIR camera or PID and did not detect any odors.

Photos and/or Videos: were not taken during the inspection.

Field Measurements: were not taken during this inspection.

Location: D&B Kibler
Arrival Time: 2:12 pm
Departure Time: 2:38 pm

Data Collected and Observations:

When we arrived, we noticed visible emissions from the combustor. We noted that the visible emissions were observable for at least five minutes.

The D&B Kibler Pad had three condensate tanks and three produced water tanks on site and in use. The low pressure tower was being bypassed. I smelt a hydrocarbon smell once I climbed the tank battery. Emissions were detected with the FLIR at the following locations and were confirmed to be VOC with the PID.

Location	Equipment	Notes
W1 Tank	Emergency Hatch	Staining around the hatch
C1 Tank	Thief Hatch	FLIR tag stated it was inspected on 7/26 and repaired
C2 Tank	Instrumentation	

Photos and/or Videos: were taken during the inspection.

Field Measurements: were not taken during this inspection.

Location: Judy Brown
Arrival Time: 2:50 pm
Departure Time: 3:02 pm

Data Collected and Observations:

The Judy Brown Pad had three condensate tanks and three produced water tanks on site and in use. The thief hatches were a series 660 model. We did not detect any VOC with the FLIR camera or PID and did not detect any odors.

Photos and/or Videos: were not taken during the inspection.

Field Measurements: were not taken during this inspection.

Location: Frank Zehentbauer

Arrival Time: 3:10 pm

Departure Time: 3:25 pm

Data Collected and Observations:

The Frank Zehentbauer Pad had three condensate tanks and three produced water tanks on site and in use. We took a video of the combustor. We did not detect any VOC with the FLIR camera or PID and did not detect any odors.

Photos and/or Videos: were not taken during the inspection.

Field Measurements: were not taken during this inspection.

Location: Trebilcock

Arrival Time: 3:58 pm

Departure Time: 4:06 pm

Data Collected and Observations:

The Trebilcock Pad had three condensate tanks and three produced water tanks on site and in use. We did not detect any VOC with the FLIR camera or PID and did not detect any odors.

Photos and/or Videos: were not taken during the inspection.

Field Measurements: were not taken during this inspection.

Location: Mrugala

Arrival Time: 4:24 pm

Departure Time: 4:47 pm

Data Collected and Observations:

The Mrugala Pad had three condensate tanks and three produced water tanks on site and in use. A hydrocarbon smell was noted when we were on top of the tank battery. Emissions were detected and confirmed with the FLIR at the following locations and were confirmed to be VOC with the PID.

Location	Equipment	Notes
C2 Tank	Thief Hatch and Level Gauge	
C1 Tank	Emergency Hatch, Thief Hatch and Level Gauge	

Location	Equipment	Notes
PRV above C1 Tank	Pressure Relief Valve on the VOC collection piping	
W3 Tank	Thief Hatch	

Photos and/or Videos: were taken during the inspection.

Field Measurements: were not taken during this inspection.

Location: Huffman Trust

Arrival Time: 4:55 pm

Departure Time: 5:04 pm

Data Collected and Observations:

The Huffman Trust Pad had three condensate tanks and three produced water tanks on site and in use. We noted a hydrocarbon odor when we climbed the tank battery. Emissions were detected and confirmed with the FLIR at the following locations and were confirmed to be VOC with the PID.

Location	Equipment	Notes
C1 Tank	Thief Hatch	

Photos and/or Videos: were taken during the inspection.

Field Measurements: were not taken during this inspection.

Location: Roy D

Arrival Time: 5:15 pm

Departure Time: 5:30 pm

Data Collected and Observations:

The Roy D Pad had three condensate tanks and three produced water tanks on site and in use. We noted a hydrocarbon odor close to C1 Tank and W1 Tank. Emissions were detected and confirmed with the FLIR at the following locations and were confirmed to be VOC with the PID.

Location	Equipment	Notes
C1 Tank	Thief Hatch	

Photos and/or Videos: were taken during the inspection.

Field Measurements: were not taken during this inspection.

INSPECTION DATE: SEPTEMBER 12, 2017

Location: McCoy
Arrival Time: 9:14 am
Departure Time: 9:38 am

Data Collected and Observations:

The McCoy Pad had five condensate tanks, three produced water tanks, a low pressure tower on site and in use. We did not detect any VOC with the FLIR camera or PID and did not detect any odors.

Photos and/or Videos: were not taken during the inspection.

Field Measurements: were not taken during this inspection.

Location: Fligiel
Arrival Time: 9:48 am
Departure Time: 10:04 am

Data Collected and Observations:

The Fligiel Pad had five condensate tanks, three produced water tanks, a low pressure tower on site and in use. The low pressure tower's pressure gauge was recorded at 2.15 psig to the compressor. We did not detect any VOC with the FLIR camera or PID and did not detect any odors.

Photos and/or Videos: were not taken during the inspection.

Field Measurements: were not taken during this inspection.

Location: Poinsettia
Arrival Time: 10:15 am
Departure Time: 10:40 am

Data Collected and Observations:

The Poinsettia Pad had five condensate tanks and three produced water tanks on site and in use. No low pressure tower was located on site. We noted visible smoking of the combustor once we entered the site. We observed the combustor for 5 minutes from 10:17 am to 10:22 am during which the combustor continually emitted visible smoking emissions.

Photos and/or Videos: were taken during the inspection.

Field Measurements: were not taken during this inspection.

Location: Barnhart
Arrival Time: 10:49 am
Departure Time: 11:19 am

Data Collected and Observations:

The Barnhart Pad had five condensate tanks and three produced water tanks on site and in use. Chesapeake uses an Eagle 2 instrument for its Method 21 leak detection program. We asked to see the calibration of the Eagle 2 instrument. We noted that the calibration gas was due to expire in 2020 and was a 2.5% methane gas. The thief hatches had a “neck” between the tank surface and the hatch. We noted a strong hydrocarbon odor when we reached the top of the tank battery. A dump event occurred while we recorded the video at Tanks C3 and W3. Emissions were detected and confirmed with the FLIR at the following locations and were confirmed to be VOC with the PID. The pressure at the knockout tank prior to the combustor was 0 psi at the start of the inspection.

Location	Equipment	Notes
C5 Tank	Level Gauge	
C3 Tank	Thief Hatch	
W3 Tank	Thief Hatch, Emergency Hatch	
C2 Tank	Level Gauge	
W2 Tank	Thief Hatch	
C1 Tank	Thief Hatch	

Photos and/or Videos: were taken during the inspection.

Field Measurements: were not taken during this inspection.

Location: Leggett
Arrival Time: 11:24 am
Departure Time: 11:44 am

Data Collected and Observations:

The Leggett Pad had eight condensate tanks, four produced water tanks and a low pressure tower on site and in use. We did not detect any VOC with the FLIR camera or PID and did not observe any odors. The pressure at the knockout tank prior to the combustor was 0 psi at the start of the inspection.

Photos and/or Videos: were not taken during the inspection.

Field Measurements: were not taken during this inspection.

Location: Ray Haley
Arrival Time: 12:54 pm
Departure Time: 1:11 pm

Data Collected and Observations:

The Ray Haley Pad had five condensate tanks, three produced water tanks and a low pressure tower on site and in use. We noted a hydrocarbon odor once we reached the top of the tank battery. Emissions were detected and confirmed with the FLIR at the following locations and were confirmed to be VOC with the PID.

Location	Equipment	Notes
C5 Tank	Emergency Hatch	

Photos and/or Videos: were taken during the inspection.

Field Measurements: were not taken during this inspection.

Location: Edie
Arrival Time: 1:19 pm
Departure Time: 2:10 pm

Data Collected and Observations:

The Edie Pad had six condensate tanks and four produced water tanks on site and in use. No low pressure tower was in operation; however, two skids were in operation. The skids received material from the heater treater and are used to flash off the light ends from the incoming material. We noticed LDAR tags on several components on top of the tanks; however, the repairs were not completed. Brian stated that the repairs are completed during shutdowns and that a contractor is tasked with repairs associated with the thief hatches. We noted a hydrocarbon odor once we reached the top of the tank battery. Emissions were detected and confirmed with the FLIR at the following locations and were confirmed to be VOC with the PID.

Location	Equipment	Notes
C6 Tank	Thief Hatch, Emergency Hatch, Level Gauge	Leak tags 5825 and 5824. No leak tag on the level gauge.
W3 Tank	Thief Hatch, Emergency Hatch	Leak tags 5829 and 5830.
C3 Tank	Emergency Hatch	Leak tag 5823.
W2 Tank	Thief Hatch	Leak tag 5828.
C2 Tank	Thief Hatch, Emergency Hatch	Leak tags 5822 and 5821.
W1 Tank	Emergency Hatch, Thief Hatch	Leak tag 5827. No leak tag on thief hatch.
C1 Tank	Thief Hatch, Emergency Hatch	Leak tags 5820 and 5819.
C5 Tank	Level gauge	No leak tag.
C6 Tank	Level gauge	No leak tag.

Photos and/or Videos: were taken during the inspection.

Field Measurements: were not taken during this inspection.

Location: Bowerston
Arrival Time: 2:35 pm
Departure Time: 3:04 pm

Data Collected and Observations:

The Bowerston Pad had ten condensate tanks and five produced water tanks on site and in use. No low pressure tower was in use. Trucks were being loaded when we were on site. The pressure gauge on the knockout drum prior to the combustor showed a reading of 3.5 oz. We noted a hydrocarbon odor once we reached the top of the tank battery. Emissions were detected and confirmed with the FLIR at the following locations and were confirmed to be VOC with the PID.

Location	Equipment	Notes
C10 Tank	Emergency Hatch	
C9 Tank	Emergency Hatch	
C8 Tank	Level gauge, Emergency Hatch	Leak tag 6741 on the level gauge.
W5 Tank	Level gauge	
C5 Tank	Emergency Hatch	Leak tag 6740
W4 Tank	Emergency Hatch, Thief Hatch	Leak tags 6736 and 6735
C4 Tank	Level gauge, Emergency Hatch	Leak tags 6739 and 6738
W3 Tank	Emergency Hatch	
C2 Tank	Emergency Hatch	
W1 Tank	PRV, Emergency Hatch	Leak tags seen but numbers were illegible.
Above C1 Tank	PRV	Leak tags seen but numbers were illegible. Vacuum side leaking.

Photos and/or Videos: were taken during the inspection.

Field Measurements: were not taken during this inspection.

Location: Our Land Co
Arrival Time: 3:16 pm
Departure Time: 3:38 pm

Data Collected and Observations:

The Our Land Co Pad had three condensate tanks, three produced water tanks and a low pressure tower on site and in use. We noted a hydrocarbon odor once we reached the top of the tank battery. Emissions were detected and confirmed with the FLIR at the following locations and were confirmed to be VOC with the PID.

Location	Equipment	Notes
C3 Tank	Emergency Hatch, Thief Hatch, Level gauge	
W3 Tank	Emergency Hatch	Leak tag 5442
W2 Tank	Level gauge, Thief Hatch	Leak tag 6741 on the level gauge.
C2 Tank	Plug	
C3 Tank	Emergency Hatch, Level gauge	Leak tag 5443 and 5444
W3 Tank	Emergency Hatch, PRV above tank	

Photos and/or Videos: were taken during the inspection.

Field Measurements: were not taken during this inspection.

Location: Trushell
Arrival Time: 3:49 pm
Departure Time: 4:01 pm

Data Collected and Observations:

The Trushell Pad had five condensate tanks, three produced water tanks and a low pressure tower on site and in use. We did not detect any VOC with the FLIR camera or PID and did not observe any odors.

Photos and/or Videos: were not taken during the inspection.

Field Measurements: were not taken during this inspection.

Location: R. Alan
Arrival Time: 4:08 pm
Departure Time: 4:29 pm

Data Collected and Observations:

The R. Alan Pad had eight condensate tanks and four produced water tanks on site and in use. We noted a hydrocarbon smell on the top of the tank battery. The pressure on the tank battery was 0.05 psi. Emissions were detected and confirmed with the FLIR at the following locations and were confirmed to be VOC with the PID.

Location	Equipment	Notes
C8 Tank	Thief Hatch, Level gauge	
C7 Tank	Level gauge	
C6 Tank	Thief Hatch	
C5 Tank	Thief Hatch	
C4 Tank	Emergency Hatch	
W4 Tank	Thief Hatch	
W3 Tank	Thief Hatch, Emergency Hatch	

Location	Equipment	Notes
C2 Tank	Emergency Hatch, Level gauge	
W2 Tank	Emergency Hatch, Thief Hatch, Level Gauge	
C1 Tank	Level Gauge	
W1 Tank	Thief Hatch, Emergency Hatch	

Photos and/or Videos: were taken during the inspection.

Field Measurements: were not taken during this inspection.

Location: Yoder/Yoder North

Arrival Time: 4:35 pm

Departure Time: 5:10 pm

Data Collected and Observations:

The Yoder/Yoder North Pad had five condensate tanks and three produced water tanks on site and in use. We noted a hydrocarbon smell on the top of the tank battery. Emissions were detected and confirmed with the FLIR at the following locations and were confirmed to be VOC with the PID. We also took a video of the combustor.

Location	Equipment	Notes
C5 Tank	Level Gauge	
C4 Tank	Thief Hatch	
C3 Tank	Thief Hatch	
W3 Tank	Thief Hatch	
W2 Tank	Thief Hatch, Emergency Hatch	
C1 Tank	Thief Hatch	
W1 Tank	Thief Hatch, Emergency Hatch	
Above W1 Tank	PRV	

Photos and/or Videos: were taken during the inspection.

Field Measurements: were not taken during this inspection.

INSPECTION DATE: SEPTEMBER 13, 2017

Location: Rogers

Arrival Time: 8:33 am

Departure Time: 9:03 am

Data Collected and Observations:

The Rogers Pad had five condensate tanks, three produced water tanks and a low pressure tower on site and in use. We noted a hydrocarbon smell on the top of the tank battery. Emissions were

detected and confirmed with the FLIR at the following locations and were confirmed to be VOC with the PID.

Location	Equipment	Notes
C5 Tank	Level Gauge	
C4 Tank	Thief Hatch	
W3 Tank	Thief Hatch, Emergency Hatch	
W2 Tank	Level Gauge, Thief Hatch, Emergency Hatch	
C2 Tank	Thief Hatch, Level Gauge	
W1 Tank	Thief Hatch	
C1 Tank	Level Gauge	
W1 Tank	Emergency Hatch	

Photos and/or Videos: were taken during the inspection.

Field Measurements: were not taken during this inspection.

Location: Javersak

Arrival Time: 9:13 am

Departure Time: 9:34 am

Data Collected and Observations:

The Javersak Pad had five condensate tanks and three produced water tanks on site and in use. We met a production foreman onsite named Dan Gardner. We noted a hydrocarbon smell on the top of the tank battery and saw condensate next to the thief hatch on Tank C2. Emissions were detected and confirmed with the FLIR at the following locations and were confirmed to be VOC with the PID.

Location	Equipment	Notes
C5 Tank	Emergency Hatch	Leak tag 5746
C4 Tank	Thief Hatch, Level Gauge	
W3 Tank	Emergency Hatch, Thief Hatch, Level Gauge	Leak tag 5757 and 5756 dated 7/25. No leak tag on level gauge
W2 Tank	Thief Hatch	Leak tag 5754 dated 7/25
W1 Tank	Thief Hatch	Leak tag 5752 dated 7/25
Above W1 Tank	PRV	Leak tag 5751 dated 7/25
C1 Tank	Thief Hatch	Leak tag 5750 dated 7/25
C2 Tank	Thief Hatch	

Photos and/or Videos: were taken during the inspection.

Field Measurements: were not taken during this inspection.

Location: William Phillips

Arrival Time: 9:53 am

Departure Time: 10:14 am

Data Collected and Observations:

The William Phillips Pad had five condensate tanks, three produced water tanks and a low pressure tower on site and in use. We noted a hydrocarbon smell on the top of the tank battery. Emissions were detected and confirmed with the FLIR at the following locations and were confirmed to be VOC with the PID.

Location	Equipment	Notes
C5 Tank	Level Gauge, Thief Hatch	
C4 Tank	Thief Hatch, Emergency Hatch	
W3 Tank	Thief Hatch	
C3 Tank	Thief Hatch, Emergency Hatch	
W2 Tank	Thief Hatch, Emergency Hatch	
C2 Tank	Thief Hatch	
W1 Tank	Thief Hatch, Emergency Hatch	
C1 Tank	Thief Hatch, Emergency Hatch	

Photos and/or Videos: were taken during the inspection.

Field Measurements: were not taken during this inspection.

Location: Valdinger

Arrival Time: 10:20 am

Departure Time: 10:31 am

Data Collected and Observations:

The Valdinger Pad had five condensate tanks and three produced water tanks on site. The well pad was shut in per maintenance. The low pressure tower was connected to the system. The pressure at the knock out drum prior to the combustor was 0 psi.

Photos and/or Videos: were not taken during the inspection.

Field Measurements: were not taken during this inspection.

Location: Demis

Arrival Time: 10:36 am

Departure Time: 10:48 am

Data Collected and Observations:

The Demis Pad had five condensate tanks, three produced water tanks and a low pressure tower on site and in use. A low pressure tower was also in use. The pressure at the knock out drum prior to the combustor was 0 psi. We noted a hydrocarbon smell on the top of the tank battery. Emissions were detected and confirmed with the FLIR at the following locations and were confirmed to be VOC with the PID.

Location	Equipment	Notes
W3 Tank	Thief Hatch, Emergency Hatch	Leak tag 5922 and 5923 dated 5/23/17
W2 Tank	Thief Hatch, Emergency Hatch	Leak tag 5921 and 5920 dated 5/23/17
C2 Tank	Thief Hatch	Leak tag 5919 dated 5/23/17
W1 Tank	Thief Hatch, Emergency Hatch	Leak tag 5918 and 5917 dated 5/23/17
C5 Tank	Thief Hatch, Emergency Hatch	Leak tag 5917 and 5915 dated 5/23/17

Photos and/or Videos: were taken during the inspection.

Field Measurements: were not taken during this inspection.

Location: William Denoon

Arrival Time: 10:55 am

Departure Time: 11:15 am

Data Collected and Observations:

The William Denoon Pad had six condensate tanks, three produced water tanks and a low pressure tower on site and in use. The thief hatches and emergency hatches has raised “necks” that connected it to the roof of the tank. The pressure at the knockout drum prior to the combustor was 6 oz. We noted a hydrocarbon smell on the top of the tank battery. Emissions were detected and confirmed with the FLIR at the following locations and were confirmed to be VOC with the PID. A picture was taken of a pipe connected to top of tank W3 that had a valve in the closed position.

Location	Equipment	Notes
C2 Tank	Level Gauge	

Photos and/or Videos: were taken during the inspection.

Field Measurements: were not taken during this inspection.

Location: Addy
Arrival Time: 11:27 am
Departure Time: 11:51 am

Data Collected and Observations:

The Addy Pad had five condensate tanks, three produced water tanks and a low pressure tower on site and in use. We noted a hydrocarbon smell on the top of the tank battery. Emissions were detected and confirmed with the FLIR at the following locations and were confirmed to be VOC with the PID.

Location	Equipment	Notes
C4 Tank	Level Gauge, Thief Hatch	
C3 Tank	Emergency Hatch, Level Gauge, Thief Hatch	
W3 Tank	Thief Hatch, Emergency Hatch, Level Gauge	
C2 Tank	Level Gauge, Emergency Hatch	
W2 Tank	Thief Hatch, Emergency Hatch, Level Gauge	
C1 Tank	Level Gauge	
W1 Tank	Level Gauge, Emergency Hatch, Thief Hatch	

Photos and/or Videos: were taken during the inspection.

Field Measurements: were not taken during this inspection.

Location: Wright Pad
Arrival Time: 12:07 pm
Departure Time: 12:33 pm

Data Collected and Observations:

The Wright Pad had eight condensate tanks, four produced water tanks and a low pressure tower on site and in use. The pressure at the knockout drum prior to the combustor was 1 oz. We noted a hydrocarbon smell on the top of the tank battery. Emissions were detected and confirmed with the FLIR at the following locations and were confirmed to be VOC with the PID.

Location	Equipment	Notes
C8 Tank	Thief Hatch, Emergency Hatch, Level Gauge	
C7 Tank	Level Gauge	
C6 Tank	Thief Hatch, Emergency Hatch, Level Gauge	

Location	Equipment	Notes
C5 Tank	Emergency Hatch, Thief Hatch, Level Gauge	
C4 Tank	Emergency Hatch, Thief Hatch, Level Gauge	
W4 Tank	Emergency Hatch, Thief Hatch, Level Gauge	Emergency Hatch was not confirmed with a PID
C3 Tank	Emergency Hatch, Level Gauge	
W3 Tank	Thief Hatch, Level Gauge	
C2 Tank	Level Gauge	
W2 Tank	Emergency Hatch	

Photos and/or Videos: were taken during the inspection.

Field Measurements: were not taken during this inspection.

Location: Dodson

Arrival Time: 1:05 pm

Departure Time: 1:18 pm

Data Collected and Observations:

The Dodson Pad had five condensate tanks, three produced water tanks and a low pressure tower on site and in use. The pressure at the knockout drum prior to the combustor was 3 oz. We took a video of the combustor.

Photos and/or Videos: were taken during the inspection.

Field Measurements: were not taken during this inspection.

Location: Klodt

Arrival Time: 1:28 pm

Departure Time: 2:15 pm

Data Collected and Observations:

The Klodt Pad had eight condensate tanks, four produced water tanks and a low pressure tower on site and in use. The pressure at the knockout drum prior to the combustor was 5 oz. We noted a hydrocarbon smell on the top of the tank battery. Emissions were detected and confirmed with the FLIR at the following locations and were confirmed to be VOC with the PID.

Location	Equipment	Notes
C8 Tank	Thief Hatch, Emergency Hatch, Level Gauge	
W4 Tank	Thief Hatch, Emergency Hatch, Level Gauge	

Location	Equipment	Notes
C7 Tank	Level Gauge	
W3 Tank	Emergency Hatch, Thief Hatch, Level Gauge	
C1 Tank	Level Gauge	
C6 Tank	Thief Hatch, Level Gauge	
C2 Tank	Level Gauge	
W2 Tank	Thief Hatch, Emergency Hatch, Level Gauge	Visual condensation seen
C3 Tank	Thief Hatch, Level Gauge	
C5 Tank	Level Gauge	
Above C5 Tank	PRV vacuum side	
C4 Tank	Level Gauge, Thief Hatch, 4inch plug	
W1 Tank	Emergency Hatch, Thief Hatch	
Above W1 Tank	PRV	
C1 Tank	Level Gauge	Visual condensation seen

Photos and/or Videos: were taken during the inspection.

Field Measurements: were not taken during this inspection.

CLOSING CONFERENCE

Concerns: We had concerns about the calibration gas being used to calibrate Chesapeake's PID, the LDAR survey methodology (including length of time the probe was held near the component), and the systemic nature of the emissions from the storage vessel batteries.

SIGNATURES

Report Author: Shefa Patel Date: 5/29/18

Section Chief: Brian Stevens Date: 6/5/18

Facility Name: Chesapeake Exploration LLC

Facility Location: Harrison, Columbiana, & Jefferson Counties, Ohio

Date of Inspection: September 11-13, 2017

APPENDICES AND ATTACHMENTS

Appendix A – Photo and Video log

Photos and videos included on DVD as Attachment

Facility Name: Chesapeake Exploration LLC

Facility Location: Harrison, Columbiana, & Jefferson Counties, Ohio

Date of Inspection: September 11-13, 2017

APPENDIX A:

PHOTO LOG

1. Inspector Name: Shilpa Patel	2. Date(s) of Inspection: September 11-13, 2017
3. Company/Facility Name: Chesapeake Exploration LLC	4. Street Address, City, State: Harrison, Columbiana, & Jefferson Counties, Ohio
5. Number of Images: 155	6. Archival Record Location: External storage media labeled as "Chesapeake Exploration LLC Inspection photos and video, Disc 2 of 3" and "Chesapeake Exploration LLC Inspection photos and video, Disc 3 of 3"

Image Number	File Name	Date and Time (incl. time zone and DST)	Description of Image
1	MOV_1869.mp4	9/11/2017 14:24	D&B Kibler: W1 Tank EH
2	MOV_1871.mp4	9/11/2017 14:28	D&B Kibler: Tank C1 TH
3	MOV_1872.mp4	9/11/2017 14:31	D&B Kibler: Tank C2 I
4	MOV_1874.mp4	9/11/2017 16:31	Mrugala: Tank C2 TH
5	MOV_1875.mp4	9/11/2017 16:33	Mrugala: Tank C2 I
6	MOV_1876.mp4	9/11/2017 16:34	Mrugala: Tank C1 EH
7	MOV_1877.mp4	9/11/2017 16:37	Mrugala: Tank C1 TH/I
8	MOV_1878.mp4	9/11/2017 16:40	Mrugala: PRV above Tank C1
9	MOV_1879.mp4	9/11/2017 16:45	Mrugala: W3 Tank TH
10	MOV_1880.mp4	9/11/2017 17:03	Huffman Trust: Tank C1 TH
11	MOV_1881.mp4	9/11/2017 17:05	Huffman Trust: Tank C1 TH
12	MOV_1882.mp4	9/11/2017 17:22	Roy D: Tank C1 TH
13	MOV_1883.mp4	9/12/2017 10:29	Poinsettia: Combustor visible emission
14	MOV_1884.mp4	9/12/2017 10:54	Barnhart: Tank C5 I
15	MOV_1885.mp4	9/12/2017 10:58	Barnhart: Tank C3 TH
16	MOV_1886.mp4	9/12/2017 11:01	Barnhart: Tank W3 TH
17	MOV_1887.mp4	9/12/2017 11:03	Barnhart: Tank W3 EH
18	MOV_1888.mp4	9/12/2017 11:05	Barnhart: Tank C2 I
19	MOV_1889.mp4	9/12/2017 11:06	Barnhart: Tank W2 TH
20	MOV_1891.mp4	9/12/2017 11:08	Barnhart: Tank C1 TH
21	MOV_1892.mp4	9/12/2017 13:06	Ray Haley: Tank C5 EH
22	MOV_1893.mp4	9/12/2017 13:29	Edie: Tank C6 TH
23	MOV_1894.mp4	9/12/2017 13:31	Edie: Tank C6 EH
24	MOV_1895.mp4	9/12/2017 13:35	Edie: Tank W3 EH

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Image Number	File Name	Date and Time (incl. time zone and DST)	Description of Image
25	MOV_1896.mp4	9/12/2017 13:38	Edie: Tank W3 TH
26	MOV_1897.mp4	9/12/2017 13:40	Edie: Tank C3 TH
27	MOV_1898.mp4	9/12/2017 13:44	Edie: Tank W2 TH
28	MOV_1899.mp4	9/12/2017 13:45	Edie: Tank C2 TH
29	MOV_1900.mp4	9/12/2017 13:52	Edie: Tank C2 EH
30	MOV_1901.mp4	9/12/2017 13:54	Edie: Tank W1 EH
31	MOV_1902.mp4	9/12/2017 13:55	Edie: Tank W1 TH
32	MOV_1903.mp4	9/12/2017 13:56	Edie: Tank C1 TH
33	MOV_1904.mp4	9/12/2017 13:58	Edie: Tank C1 EH
34	MOV_1905.mp4	9/12/2017 14:02	Edie: Tank C5 I
35	MOV_1906.mp4	9/12/2017 14:03	Edie: Tank C6 I
36	MOV_1907.mp4	9/12/2017 14:47	Bowerston: Tank C10 EH
37	MOV_1908.mp4	9/12/2017 14:48	Bowerston: Tank C9 EH
38	MOV_1909.mp4	9/12/2017 14:49	Bowerston: Tank C8 I
39	MOV_1910.mp4	9/12/2017 14:50	Bowerston: Tank C8 EH
40	MOV_1911.mp4	9/12/2017 14:52	Bowerston: Tank W5 I
41	MOV_1912.mp4	9/12/2017 14:53	Bowerston: Tank C5 EH
42	MOV_1913.mp4	9/12/2017 14:54	Bowerston: Tank W4 EH/TH
43	MOV_1914.mp4	9/12/2017 14:55	Bowerston: Tank C4 I/EH
44	MOV_1915.mp4	9/12/2017 14:56	Bowerston: Tank W3 EH
45	MOV_1916.mp4	9/12/2017 14:58	Bowerston: Tank C3 EH
46	MOV_1917.mp4	9/12/2017 14:58	Bowerston: Tank W1 PRV/EH
47	MOV_1918.mp4	9/12/2017 14:59	Bowerston: Tank C1 PRV
48	MOV_1919.mp4	9/12/2017 15:19	Our Land: Tank C3 EH
49	MOV_1920.mp4	9/12/2017 15:21	Our Land: Tank C3 TH
50	MOV_1921.mp4	9/12/2017 15:22	Our Land: Tank C3 I
51	MOV_1922.mp4	9/12/2017 15:23	Our Land: Tank W3 EH
52	MOV_1923.mp4	9/12/2017 15:26	Our Land: Tank W2 I
53	MOV_1924.mp4	9/12/2017 15:27	Our Land: Tank W2 TH
54	MOV_1925.mp4	9/12/2017 15:29	Our Land: Tank C2 plug
55	MOV_1926.mp4	9/12/2017 15:30	Our Land: Tank C2 I
56	MOV_1927.mp4	9/12/2017 15:31	Our Land: Tank C3 EH
57	MOV_1928.mp4	9/12/2017 15:32	Our Land: Tank C3 I
58	MOV_1929.mp4	9/12/2017 15:35	Our Land: Tank W3 EH/PRV
59	MOV_1930.mp4	9/12/2017 16:13	R Alan: Tank C8 I
60	MOV_1931.mp4	9/12/2017 16:13	R Alan: Tank C8 TH
61	MOV_1932.mp4	9/12/2017 16:15	R Alan: Tank C7 I
62	MOV_1933.mp4	9/12/2017 16:16	R Alan: Tank C6 TH
63	MOV_1934.mp4	9/12/2017 16:17	R Alan: Tank C5 TH

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Image Number	File Name	Date and Time (incl. time zone and DST)	Description of Image
64	MOV_1935.mp4	9/12/2017 16:18	R Alan: Tank C4 EH
65	MOV_1936.mp4	9/12/2017 16:19	R Alan: Tank W4 TH
66	MOV_1937.mp4	9/12/2017 16:21	R Alan: Tank W3 TH
67	MOV_1938.mp4	9/12/2017 16:22	R Alan: Tank W3 EH
68	MOV_1939.mp4	9/12/2017 16:23	R Alan: Tank C2 EH/I
69	MOV_1940.mp4	9/12/2017 16:24	R Alan: Tank W2 EH/I/TH
70	MOV_1941.mp4	9/12/2017 16:25	R Alan: Tank C1 I
71	MOV_1942.mp4	9/12/2017 16:27	R Alan: Tank W1 TH/EH
72	MOV_1943.mp4	9/12/2017 16:39	Yoder: Combustor
73	MOV_1944.mp4	9/12/2017 16:41	Yoder: Tank C5 I
74	MOV_1945.mp4	9/12/2017 16:42	Yoder: Tank C4 TH
75	MOV_1946.mp4	9/12/2017 16:43	Yoder: Tank C3 TH
76	MOV_1947.mp4	9/12/2017 16:44	Yoder: Tank W3 TH
77	MOV_1948.mp4	9/12/2017 16:45	Yoder: Tank W2 TH
78	MOV_1949.mp4	9/12/2017 16:46	Yoder: Tank W2 EH
79	MOV_1950.mp4	9/12/2017 16:47	Yoder: Tank C1 TH
80	MOV_1951.mp4	9/12/2017 16:48	Yoder: Tank W1 TH
81	MOV_1952.mp4	9/12/2017 16:49	Yoder: Tank W1 EH
82	MOV_1953.mp4	9/12/2017 16:50	Yoder: Tank W1 PRV
83	MOV_1954.mp4	9/13/2017 8:39	Rogers: Tank C5 I
84	MOV_1955.mp4	9/13/2017 8:40	Rogers: Tank C4 TH
85	MOV_1956.mp4	9/13/2017 8:43	Rogers: Tank W3 TH
86	MOV_1957.mp4	9/13/2017 8:44	Rogers: Tank W3 EH
87	MOV_1958.mp4	9/13/2017 8:45	Rogers: Tank W2 I
88	MOV_1959.mp4	9/13/2017 8:46	Rogers: Tank W2 TH
89	MOV_1960.mp4	9/13/2017 8:49	Rogers: Tank C2 TH
90	MOV_1961.mp4	9/13/2017 8:50	Rogers: Tank C2 I
91	MOV_1962.mp4	9/13/2017 8:51	Rogers: Tank W2 EH
92	MOV_1963.mp4	9/13/2017 8:53	Rogers: Tank W1 TH
93	MOV_1964.mp4	9/13/2017 8:54	Rogers: Tank C1 I
94	MOV_1965.mp4	9/13/2017 8:56	Rogers: Tank W1 EH
95	MOV_1966.mp4	9/13/2017 9:18	Javersak: Tank C5 EH
96	MOV_1967.mp4	9/13/2017 9:20	Javersak: Tank C4 TH
97	MOV_1968.mp4	9/13/2017 9:20	Javersak: Tank C4 I
98	MOV_1969.mp4	9/13/2017 9:21	Javersak: Tank W3 EH
99	MOV_1970.mp4	9/13/2017 9:22	Javersak: Tank W3 TH
100	MOV_1971.mp4	9/13/2017 9:23	Javersak: Tank W3 I
101	MOV_1972.mp4	9/13/2017 9:24	Javersak: Tank W2 TH
102	MOV_1973.mp4	9/13/2017 9:26	Javersak: Tank W1 TH

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Image Number	File Name	Date and Time (incl. time zone and DST)	Description of Image
103	MOV_1974.mp4	9/13/2017 9:27	Javersak: Tank W1 PRV
104	MOV_1975.mp4	9/13/2017 9:28	Javersak: Tank C1 TH
105	MOV_1976.mp4	9/13/2017 9:31	Javersak: Tank C2 TH
106	MOV_1977.mp4	9/13/2017 9:59	William Phillips: Tank C5 I/TH
107	MOV_1978.mp4	9/13/2017 10:01	William Phillips: Tank C4 TH/EH
108	MOV_1979.mp4	9/13/2017 10:03	William Phillips: Tank W3 TH
109	MOV_1980.mp4	9/13/2017 10:04	William Phillips: Tank C3 TH/EH
110	MOV_1981.mp4	9/13/2017 10:05	William Phillips: Tank W2 TH/EH
111	MOV_1982.mp4	9/13/2017 10:07	William Phillips: Tank C2 TH
112	MOV_1983.mp4	9/13/2017 10:08	William Phillips: Tank W1 TH/EH
113	MOV_1984.mp4	9/13/2017 10:09	William Phillips: Tank C1 TH/EH
114	DC_1985.jpg	9/13/2017 11:03	William Denoon: Tank W3 pipe from roof to atmosphere with a valve
115	MOV_1986.mp4	9/13/2017 11:05	William Denoon: C2 I
116	MOV_1987.mp4	9/13/2017 11:33	Addy: Tank C4 I
117	MOV_1988.mp4	9/13/2017 11:34	Addy: Tank C4 TH
118	MOV_1989.mp4	9/13/2017 11:35	Addy: Tank C3 EH
119	MOV_1990.mp4	9/13/2017 11:37	Addy: Tank C3 I/TH
120	MOV_1991.mp4	9/13/2017 11:39	Addy: Tank W3 TH/EH/I
121	MOV_1992.mp4	9/13/2017 11:41	Addy: Tank C2 I/EH
122	MOV_1993.mp4	9/13/2017 11:43	Addy: Tank W2 TH/EH
123	MOV_1994.mp4	9/13/2017 11:44	Addy: Tank W2 I
124	MOV_1995.mp4	9/13/2017 11:46	Addy: Tank C1 I
125	MOV_1996.mp4	9/13/2017 11:47	Addy: Tank W1 EH
126	MOV_1997.mp4	9/13/2017 11:48	Addy: Tank W1 TH
127	MOV_1998.mp4	9/13/2017 12:12	Wright: Tank C8 TH/EH
128	MOV_1999.mp4	9/13/2017 12:12	Wright: Tank C3 I
129	MOV_2000.mp4	9/13/2017 12:14	Wright: Tank C7 I
130	MOV_2001.mp4	9/13/2017 12:16	Wright: Tank C6 TH/EH/I
131	MOV_2002.mp4	9/13/2017 12:18	Wright: Tank C5 EH/TH/I
132	MOV_2003.mp4	9/13/2017 12:20	Wright: Tank C4 EH
133	MOV_2004.mp4	9/13/2017 12:21	Wright: Tank C4 TH/I
134	MOV_2005.mp4	9/13/2017 12:22	Wright: Tank W4 EH/TH/I
135	MOV_2006.mp4	9/13/2017 12:24	Wright: Tank C3 EH/I
136	MOV_2007.mp4	9/13/2017 12:26	Wright: Tank W3 I/TH
137	MOV_2008.mp4	9/13/2017 12:27	Wright: Tank C2 I
138	MOV_2009.mp4	9/13/2017 12:28	Wright: Tank W2 EH
139	MOV_2010.mp4	9/13/2017 13:19	Dodson: Combustor
140	MOV_1881.mp4	9/13/2017 13:30	Klodt: Tank Battery from the ground

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Image Number	File Name	Date and Time (incl. time zone and DST)	Description of Image
141	MOV_1882.mp4	9/13/2017 13:32	Klodt: Tank C1 I
142	MOV_1883.mp4	9/13/2017 13:33	Klodt: Tank C2 I
143	MOV_1884.mp4	9/13/2017 13:34	Klodt: Tank C3 I
144	MOV_1885.mp4	9/13/2017 13:35	Klodt: Tank C3 TH
145	MOV_1886.mp4	9/13/2017 13:36	Klodt: Tank C4 I
146	MOV_1887.mp4	9/13/2017 13:38	Klodt: Tank C4 TH/Plug
147	MOV_2011.mp4	9/13/2017 13:32	Klodt: Tank C8 EH/TH/I
148	MOV_2012.mp4	9/13/2017 13:34	Klodt: Tank W4 EH/TH/I
149	MOV_2013.mp4	9/13/2017 13:35	Klodt: Tank C7 I
150	MOV_2014.mp4	9/13/2017 13:36	Klodt: Tank W3 EH/TH/I
151	MOV_2015.mp4	9/13/2017 13:37	Klodt: Tank C6 TH/I
152	MOV_2016.mp4	9/13/2017 13:39	Klodt: Tank W2 TH/EH/I
153	MOV_2017.mp4	9/13/2017 13:40	Klodt: Tank C5 I/PRV vacuum side
154	MOV_2018.mp4	9/13/2017 13:41	Klodt: Tank W1 PRV/EH/TH
155	MOV_2019.mp4	9/13/2017 13:42	Klodt: Tank W1 PRV/EH/TH